

SEQUENCE LISTING

10/561084

<110> Peter Christian MORRIS
Yvonne STAHL

14P20 Rec'd 100770 16 DEC 2005

<120> Plant Limit Dextrinase Inhibitor

<130> 13101/49101

<140> To be assigned

<141> Herewith

<150> PCT/GB2004/002583

<151> 17-JUN-2004

<150> GB 0313998.7

<151> 17-JUN-2003

<160> 25

<170> PatentIn Ver. 2.1

<210> 1

<211> 517

<212> DNA

<213> Hordeum vulgare

<220>

<221> CDS

<222> (14)..(457)

<400> 1

actagtatca aca atg gca tcc gac cat cgt cgc ttc gtc ctc tcc ggc	49
Met Ala Ser Asp His Arg Arg Phe Val Leu Ser Gly	
1 5 10	
gcc gtc ttg ctc tcg gtc ctc gcc gtc gcc gcc gcc acc ctg gag agc	97
Ala Val Leu Leu Ser Val Leu Ala Val Ala Ala Ala Thr Leu Glu Ser	
15 20 25	
gtc aag gac gag tgc caa cca ggg gtg gac ttc ccg cat aac ccg tta	145
Val Lys Asp Glu Cys Gln Pro Gly Val Asp Phe Pro His Asn Pro Leu	
30 35 40	
gcc acc tgc cac acc tac gtg ataaaa cgg gtc tgc ggc cgc ggt ccc	193
Ala Thr Cys His Thr Tyr Val Ile Lys Arg Val Cys Gly Arg Gly Pro	
45 50 55 60	
agc cgg ccc atg ctg gtg aag gag cgg tgc tgc cgg gag ctg gcg gcc	241
Ser Arg Pro Met Leu Val Lys Glu Arg Cys Cys Arg Glu Leu Ala Ala	
65 70 75	
gtc ccg gat cac tgc cgg tgc gag gcg ctg cgc atc ctc atg gac ggg	289
Val Pro Asp His Cys Arg Cys Glu Ala Leu Arg Ile Leu Met Asp Gly	
80 85 90	
gtg cgc acg ccg gag ggc cgc gtg gtt gag gga cgg ctc ggt gac agg	337
Val Arg Thr Pro Glu Gly Arg Val Val Glu Gly Arg Leu Gly Asp Arg	
95 100 105	
cgt gac tgc ccg agg gag gag cag agg gcg ttc gcc gcc acg ctt gtc	385

Arg Asp Cys Pro Arg Glu Glu Gln Arg Ala Phe Ala Ala Thr Leu Val
 110 115 120

acg gcg gcg gag tgc aac cta tcg tcc gtc cag gag ccg gga gta cgc 433
 Thr Ala Ala Glu Cys Asn Leu Ser Ser Val Gln Glu Pro Gly Val Arg
 125 130 135 140

ttg gtg cta ctg gca gat gga tga cgatcgaaat gcgccaaggt aatgaagcgg 487
 Leu Val Leu Leu Ala Asp Gly
 145

agtactgtat acagaataaa agtactcgag 517

<210> 2
 <211> 147
 <212> PRT
 <213> Hordeum vulgare

<400> 2
 Met Ala Ser Asp His Arg Arg Phe Val Leu Ser Gly Ala Val Leu Leu
 1 5 10 15
 Ser Val Leu Ala Val Ala Ala Ala Thr Leu Glu Ser Val Lys Asp Glu
 20 25 30
 Cys Gln Pro Gly Val Asp Phe Pro His Asn Pro Leu Ala Thr Cys His
 35 40 45
 Thr Tyr Val Ile Lys Arg Val Cys Gly Arg Gly Pro Ser Arg Pro Met
 50 55 60
 Leu Val Lys Glu Arg Cys Cys Arg Glu Leu Ala Ala Val Pro Asp His
 65 70 75 80
 Cys Arg Cys Glu Ala Leu Arg Ile Leu Met Asp Gly Val Arg Thr Pro
 85 90 95
 Glu Gly Arg Val Val Glu Gly Arg Leu Gly Asp Arg Arg Asp Cys Pro
 100 105 110
 Arg Glu Glu Gln Arg Ala Phe Ala Ala Thr Leu Val Thr Ala Ala Glu
 115 120 125
 Cys Asn Leu Ser Ser Val Gln Glu Pro Gly Val Arg Leu Val Leu Leu
 130 135 140
 Ala Asp Gly
 145

<210> 3
 <211> 672
 <212> DNA
 <213> Hordeum vulgare

<220>
 <221> CDS
 <222> (39) .. (482)

<400> 3
 aagagattga accaacgacc aataaactag tatcaaca atg gca tcc gac cat cgt 56
 Met Ala Ser Asp His Arg
 1 5

cgc ttc gtc ctc tcc ggc gcc gtc ttg ctc tcg gtc ctc gcc gtc gcc 104
 Arg Phe Val Leu Ser Gly Ala Val Leu Leu Ser Val Leu Ala Val Ala
 10 15 20

gcc gcc acc ttg gag agc gtc aag gac gag tgc caa cta ggg gtg gac 152
 Ala Ala Thr Leu Glu Ser Val Lys Asp Glu Cys Gln Leu Gly Val Asp
 25 30 35
 ttc ccg cat aac ccg tta gcc acc tgc cac acc tac gtg ata aaa cgg 200
 Phe Pro His Asn Pro Leu Ala Thr Cys His Thr Tyr Val Ile Lys Arg
 40 45 50
 gtc tgc ggc cgc ggt ccc agc cgg ccc atg ctg gtg aag gag cgg tgc 248
 Val Cys Gly Arg Gly Pro Ser Arg Pro Met Leu Val Lys Glu Arg Cys
 55 60 65 70
 tgc cgg gag ctg gcg gcc gtc ccg gat cac tgc cgg tgc gag gcg ctg 296
 Cys Arg Glu Leu Ala Val Pro Asp His Cys Arg Cys Glu Ala Leu
 75 80 85
 cgc atc ctc atg gac ggg gtg cgc acg ccg gag ggc cgc gtg gtt gag 344
 Arg Ile Leu Met Asp Gly Val Arg Thr Pro Glu Gly Arg Val Val Glu
 90 95 100
 gga cgg ctc ggt gac agg cgt gac tgc ccg agg gag gag cag agg gcg 392
 Gly Arg Leu Gly Asp Arg Arg Asp Cys Pro Arg Glu Glu Gln Arg Ala
 105 110 115
 ttc gcc gcc acg ctt gtc acg gcg gcg gag tgc aac cta tcg tcc gtc 440
 Phe Ala Ala Thr Leu Val Thr Ala Ala Glu Cys Asn Leu Ser Ser Val
 120 125 130
 cag gcg ccg gga gta cgc ttg gtg cta ctg gca gat gga tga 482
 Gln Ala Pro Gly Val Arg Leu Val Leu Leu Ala Asp Gly
 135 140 145
 cgatgcaaat gcgccaaggt aatgaagcgg agtactgtat acagaataaaa agtactcgag 542
 tgaaaacaaa ctcataaata aaccttgtga gatgtatgcg tatgatctat ggtgtggaca 602
 gttaaattgt ggccgattga tgaataaaaa aggttgaac aaattaaatt gttgtggggtt 662
 catatactat 672

<210> 4

<211> 147

<212> PRT

<213> Hordeum vulgare

<400> 4

Met Ala Ser Asp His Arg Arg Phe Val Leu Ser Gly Ala Val Leu Leu
 1 5 10 15
 Ser Val Leu Ala Val Ala Ala Ala Thr Leu Glu Ser Val Lys Asp Glu
 20 25 30
 Cys Gln Leu Gly Val Asp Phe Pro His Asn Pro Leu Ala Thr Cys His
 35 40 45
 Thr Tyr Val Ile Lys Arg Val Cys Gly Arg Gly Pro Ser Arg Pro Met
 50 55 60
 Leu Val Lys Glu Arg Cys Cys Arg Glu Leu Ala Ala Val Pro Asp His
 65 70 75 80
 Cys Arg Cys Glu Ala Leu Arg Ile Leu Met Asp Gly Val Arg Thr Pro
 85 90 95
 Glu Gly Arg Val Val Glu Gly Arg Leu Gly Asp Arg Arg Asp Cys Pro

Ile Glu Leu Pro Lys
150

agatggagta ctgcatgtag aataaaagta ctcaagtga aacaaataaa taaagcttgt 596

gagctgtatg cgtatgaaaa aaaaa 621

<210> 6

<211> 153

<212> PRT

<213> Triticum aestivum

<400> 6

Met	Ala	Ser	Asn	His	Arg	Arg	Phe	Leu	Leu	Ser	Gly	Ala	Val	Leu	Leu	
1				5					10					15		
Ser	Val	Leu	Ala	Val	Ala	Ala	Leu	Glu	Ser	Val	Glu	Asp	Glu	Cys		
			20					25					30			
Gln	Pro	Gly	Val	Ala	Phe	Pro	His	Asn	Ala	Leu	Ala	Thr	Cys	His	Thr	
			35				40					45				
Tyr	Val	Ile	Lys	Arg	Val	Cys	Gly	Arg	Gly	Pro	Ser	Arg	Pro	Met	Leu	
			50			55					60					
Val	Lys	Glu	Arg	Cys	Cys	Arg	Glu	Leu	Ala	Val	Val	Pro	Asp	Tyr	Cys	
					70					75					80	
Arg	Cys	Glu	Ala	Leu	Arg	Val	Leu	Met	Asp	Gly	Val	Arg	Ala	Glu	Glu	
				85					90					95		
Gly	His	Val	Val	Glu	Gly	Arg	Leu	Gly	Asp	Arg	Arg	Asp	Cys	Pro	Arg	
			100					105					110			
Glu	Ala	Gln	Arg	Glu	Phe	Ala	Ala	Thr	Leu	Val	Thr	Ala	Ala	Glu	Cys	
			115				120					125				
Asn	Leu	Pro	Thr	Val	Ser	Gly	Val	Gly	Ser	Thr	Leu	Gly	Ala	Thr	Gly	
			130			135					140					
Arg	Trp	Met	Thr	Ile	Glu	Leu	Pro	Lys								
145						150										

<210> 7

<211> 444

<212> DNA

<213> Hordeum spontaneum

<220>

<221> CDS

<222> (1)..(444)

<400> 7

atg	gcg	ttc	aag	tac	cag	ctc	ctc	ctc	tcg	gcc	gcc	gtc	atg	ctc	gcc	48
Met	Ala	Phe	Lys	Tyr	Gln	Leu	Leu	Leu	Ser	Ala	Ala	Val	Met	Leu	Ala	
1				5					10					15		
att	ctc	gcc	gcc	act	gtc	acc	agt	ttc	ggg	gat	atg	tgt	gct	cca	ggg	96
Ile	Leu	Ala	Ala	Thr	Val	Thr	Ser	Phe	Gly	Asp	Met	Cys	Ala	Pro	Gly	
			20					25					30			
gat	gcg	ttg	cca	gcc	aac	cct	ctc	aga	gcc	tgc	cgc	acc	tat	gtg	gtt	144
Asp	Ala	Leu	Pro	Ala	Asn	Pro	Leu	Arg	Ala	Cys	Arg	Thr	Tyr	Val	Val	
		35					40					45				

```

agt caa atc tgc cat gta ggc cct aga cta tcc acc tgg gac atg aag      192
Ser Gln Ile Cys His Val Gly Pro Arg Leu Ser Thr Trp Asp Met Lys
   50                               55                               60

agg cgg tgc tgc gac gag ctg tgc gcc atc ccg gcg tac tgc aga tgc      240
Arg Arg Cys Cys Asp Glu Leu Ser Ala Ile Pro Ala Tyr Cys Arg Cys
   65                               70                               75                               80

gag gcg ctg cgt atc atc atg gat ggg aca gta act tgg cag ggt gtg      288
Glu Ala Leu Arg Ile Ile Met Asp Gly Thr Val Thr Trp Gln Gly Val
                               85                               90                               95

ttc ggt gcc tac ttc aag gac atg ccc aac tgc cct agg gtg atg caa      336
Phe Gly Ala Tyr Phe Lys Asp Met Pro Asn Cys Pro Arg Val Met Gln
                               100                               105                               110

acg agc tac gcc gcc aac ctc gtc aac ccg cag gag tgc aac cta tgg      384
Thr Ser Tyr Ala Ala Asn Leu Val Asn Pro Gln Glu Cys Asn Leu Trp
                               115                               120                               125

act atc cac ggc agc ccg tcc tgc ccc gaa ctg cag ccc gga tat gaa      432
Thr Ile His Gly Ser Pro Ser Cys Pro Glu Leu Gln Pro Gly Tyr Glu
                               130                               135                               140

gtg gtc ttg taa
Val Val Leu
145

```

```

<210> 8
<211> 147
<212> PRT
<213> Hordeum spontaneum

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<400> 8
Met Ala Phe Lys Tyr Gln Leu Leu Leu Ser Ala Ala Val Met Leu Ala
   1           5           10           15
Ile Leu Ala Ala Thr Val Thr Ser Phe Gly Asp Met Cys Ala Pro Gly
           20           25           30
Asp Ala Leu Pro Ala Asn Pro Leu Arg Ala Cys Arg Thr Tyr Val Val
           35           40           45
Ser Gln Ile Cys His Val Gly Pro Arg Leu Ser Thr Trp Asp Met Lys
           50           55           60
Arg Arg Cys Cys Asp Glu Leu Ser Ala Ile Pro Ala Tyr Cys Arg Cys
           65           70           75           80
Glu Ala Leu Arg Ile Ile Met Asp Gly Thr Val Thr Trp Gln Gly Val
           85           90           95
Phe Gly Ala Tyr Phe Lys Asp Met Pro Asn Cys Pro Arg Val Met Gln
           100          105          110
Thr Ser Tyr Ala Ala Asn Leu Val Asn Pro Gln Glu Cys Asn Leu Trp
           115          120          125
Thr Ile His Gly Ser Pro Ser Cys Pro Glu Leu Gln Pro Gly Tyr Glu
           130          135          140
Val Val Leu
145

```

```

<210> 9
<211> 483

```

<212> DNA

<213> Oryza sativa

<220>

<221> CDS

<222> (1)..(483)

<400> 9

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atg gct tcc aac aag gta gtg ttc tca gtg ttg ctt ctc gcc gtc gtc 48
Met Ala Ser Asn Lys Val Val Phe Ser Val Leu Leu Leu Ala Val Val
1 5 10 15

tcc gtg ctc gcg gcg acg gcg acc atg gcg gag tac cac cac caa gac 96
Ser Val Leu Ala Ala Thr Ala Thr Met Ala Glu Tyr His His Gln Asp
20 25 30

cag gtg gtc tac acc ccg ggc ccg ctc tgt cag cca gga atg ggc tac 144
Gln Val Val Tyr Thr Pro Gly Pro Leu Cys Gln Pro Gly Met Gly Tyr
35 40 45

ccg atg tac ccg ctc ccg cgt tgc cgg gcg ttg gtg aag cgc cag tgc 192
Pro Met Tyr Pro Leu Pro Arg Cys Arg Ala Leu Val Lys Arg Gln Cys
50 55 60

gtc ggc cgt ggc acg gcc gcc gcc gcc gag cag gtc cgg cga gac tgc 240
Val Gly Arg Gly Thr Ala Ala Ala Ala Glu Gln Val Arg Arg Asp Cys
65 70 75 80

tgc cgg cag ctc gcc gcc gtc gac gac agc tgg tgc agg tgc gag gcg 288
Cys Arg Gln Leu Ala Ala Val Asp Asp Ser Trp Cys Arg Cys Glu Ala
85 90 95

atc agc cac atg ctg gga ggc atc tac agg gag ctc ggc gcc ccc gat 336
Ile Ser His Met Leu Gly Gly Ile Tyr Arg Glu Leu Gly Ala Pro Asp
100 105 110

gtc ggg cac ccc atg tcc gag gtg ttc cgc ggc tgc cgg aga ggg gac 384
Val Gly His Pro Met Ser Glu Val Phe Arg Gly Cys Arg Arg Gly Asp
115 120 125

ttg gag cgc gcg gcg gcg agc ctc ccg gcg ttc tgc aac gtg gac atc 432
Leu Glu Arg Ala Ala Ala Ser Leu Pro Ala Phe Cys Asn Val Asp Ile
130 135 140

ccc aac ggc gga ggt ggt gtc tgc tac tgg ctg gcg aga tct ggc tac 480
Pro Asn Gly Gly Gly Gly Val Cys Tyr Trp Leu Ala Arg Ser Gly Tyr
145 150 155 160

tag 483
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<210> 10

<211> 160

<212> PRT

<213> Oryza sativa

<400> 10

```
Met Ala Ser Asn Lys Val Val Phe Ser Val Leu Leu Leu Ala Val Val
1 5 10 15
Ser Val Leu Ala Ala Thr Ala Thr Met Ala Glu Tyr His His Gln Asp
```


agc ggc ctc atc gat ctg ccc gga tgc ccc agg gag atg caa tgg gac 437
 Ser Gly Leu Ile Asp Leu Pro Gly Cys Pro Arg Glu Met Gln Trp Asp
 125 130 135

 ttc gtc aga tta ctc gtc gcc ccg ggg cag tgc aac ttg gcg acc att 485
 Phe Val Arg Leu Leu Val Ala Pro Gly Gln Cys Asn Leu Ala Thr Ile
 140 145 150

 cac aat gtt cga tac tgc ccc gcc gtg gaa cag cct ctg tgg atc tag 533
 His Asn Val Arg Tyr Cys Pro Ala Val Glu Gln Pro Leu Trp Ile
 155 160 165

 agataaaatc agtcgctcgt gaataagcat gcatgttgca tccataggcg tgtggtgtgc 593
 atgtatacat atgtgagctc cgcgcgctca acatgtgtgg gctatctgct atgaatgaga 653
 ataaagagaa tcattctgtg gttctttaat ttcaactaaa aaaaaaaaaa aaaa 707

<210> 12
 <211> 168
 <212> PRT
 <213> Triticum durum

<400> 12
 Met Ala Cys Lys Ser Ser Cys Ser Leu Leu Leu Leu Ala Ala Val Leu
 1 5 10 15
 Leu Ser Val Leu Ala Ala Ala Ser Ala Ser Gly Ser Cys Val Pro Gly
 20 25 30
 Val Ala Phe Arg Thr Asn Leu Leu Pro His Cys Arg Asp Tyr Val Leu
 35 40 45
 Gln Gln Thr Cys Gly Thr Phe Thr Pro Gly Ser Lys Leu Pro Glu Trp
 50 55 60
 Met Thr Ser Ala Ser Ile Tyr Ser Pro Gly Lys Pro Tyr Leu Ala Lys
 65 70 75 80
 Leu Tyr Cys Cys Gln Glu Leu Ala Glu Ile Ser Gln Gln Cys Arg Cys
 85 90 95
 Glu Ala Leu Arg Tyr Phe Ile Ala Leu Pro Val Pro Ser Gln Pro Val
 100 105 110
 Asp Pro Arg Ser Gly Asn Val Gly Glu Ser Gly Leu Ile Asp Leu Pro
 115 120 125
 Gly Cys Pro Arg Glu Met Gln Trp Asp Phe Val Arg Leu Leu Val Ala
 130 135 140
 Pro Gly Gln Cys Asn Leu Ala Thr Ile His Asn Val Arg Tyr Cys Pro
 145 150 155 160
 Ala Val Glu Gln Pro Leu Trp Ile
 165

<210> 13
 <211> 712
 <212> DNA
 <213> Zea mays

<220>
 <221> CDS
 <222> (33) .. (500)

<400> 13

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catccatcga gaggccgtcg acaggggaat ta atg gcg tcg tcg tct agc agc 53
                               Met Ala Ser Ser Ser Ser Ser
                               1                               5

agc cac cgc cgc ctc atc ctc gca gcc gcc gtc ctg ctc tcc gtg ctc 101
Ser His Arg Arg Leu Ile Leu Ala Ala Ala Val Leu Leu Ser Val Leu
      10                               15                               20

gcg gct gcc agc gcc agc gcc ggg acc tcc tgc gtg ccg ggg tgg gcc 149
Ala Ala Ala Ser Ala Ser Ala Gly Thr Ser Cys Val Pro Gly Trp Ala
      25                               30                               35

atc ccg cac aac ccg ctc ccg agc tgc cgc tgg tac gtg acc agc cgg 197
Ile Pro His Asn Pro Leu Pro Ser Cys Arg Trp Tyr Val Thr Ser Arg
      40                               45                               50                               55

acc tgc ggc atc ggg ccg cgc ctc ccg tgg ccg gag ctg aag agg aga 245
Thr Cys Gly Ile Gly Pro Arg Leu Pro Trp Pro Glu Leu Lys Arg Arg
      60                               65                               70

tgc tgc cgg gag ctg gcg gac atc ccg gcg tac tgc cgg tgc acg gcg 293
Cys Cys Arg Glu Leu Ala Asp Ile Pro Ala Tyr Cys Arg Cys Thr Ala
      75                               80                               85

ctg agc atc ctc atg gac ggc gcg atc ccg cct ggc ccg gac gcg cag 341
Leu Ser Ile Leu Met Asp Gly Ala Ile Pro Pro Gly Pro Asp Ala Gln
      90                               95                               100

ctg gag ggc cgc cta gag gac ctg ccg ggc tgc ccg cgg gag gtg cag 389
Leu Glu Gly Arg Leu Glu Asp Leu Pro Gly Cys Pro Arg Glu Val Gln
      105                               110                               115

agg gga ttc gcc gcc acc ctc gtc acg gag gcc gag tgc aac ctg gcc 437
Arg Gly Phe Ala Ala Thr Leu Val Thr Glu Ala Glu Cys Asn Leu Ala
      120                               125                               130                               135

acc atc agc ggc gtc gcc gaa tgc ccc tgg att ctc ggc ggc gga acg 485
Thr Ile Ser Gly Val Ala Glu Cys Pro Trp Ile Leu Gly Gly Gly Thr
      140                               145                               150

atg ccc tcc aag taa ctgcgaagag catagtgcac gaggaatgag cttgtagcta 540
Met Pro Ser Lys
      155

gctcatatgt ctgaataata agcacagcaa gaagatgaat gcatttctcg gatcgttcat 600

ccggaacaat aattaaagg gatccggatt tgttcttgtg atataattaa cgattcctgt 660

tataacttgga agtagctagg ctcgtcccca tccaatgcaa gcaaaaaaaaa aa 712

```

<210> 14

<211> 155

<212> PRT

<213> Zea mays

<400> 14

```

Met Ala Ser Ser Ser Ser Ser Ser His Arg Arg Leu Ile Leu Ala Ala
      1                               5                               10                               15

```

Ala Val Leu Leu Ser Val Leu Ala Ala Ala Ser Ala Ser Ala Gly Thr
20 25 30
Ser Cys Val Pro Gly Trp Ala Ile Pro His Asn Pro Leu Pro Ser Cys
35 40 45
Arg Trp Tyr Val Thr Ser Arg Thr Cys Gly Ile Gly Pro Arg Leu Pro
50 55 60
Trp Pro Glu Leu Lys Arg Arg Cys Cys Arg Glu Leu Ala Asp Ile Pro
65 70 75 80
Ala Tyr Cys Arg Cys Thr Ala Leu Ser Ile Leu Met Asp Gly Ala Ile
85 90 95
Pro Pro Gly Pro Asp Ala Gln Leu Glu Gly Arg Leu Glu Asp Leu Pro
100 105 110
Gly Cys Pro Arg Glu Val Gln Arg Gly Phe Ala Ala Thr Leu Val Thr
115 120 125
Glu Ala Glu Cys Asn Leu Ala Thr Ile Ser Gly Val Ala Glu Cys Pro
130 135 140
Trp Ile Leu Gly Gly Gly Thr Met Pro Ser Lys
145 150 155

<210> 15
<211> 122
<212> PRT
<213> Eleusine coracana

<400> 15
Ser Val Gly Thr Ser Cys Ile Pro Gly Met Ala Ile Pro His Asn Pro
1 5 10 15
Leu Asp Ser Cys Arg Trp Tyr Val Ala Lys Arg Ala Cys Gly Val Gly
20 25 30
Pro Arg Leu Ala Thr Gln Glu Met Lys Ala Arg Cys Cys Arg Gln Leu
35 40 45
Glu Ala Ile Pro Ala Tyr Cys Arg Cys Glu Ala Val Arg Ile Leu Met
50 55 60
Asp Gly Val Val Thr Pro Ser Gly Gln His Glu Gly Arg Leu Leu Gln
65 70 75 80
Asp Leu Pro Gly Cys Pro Arg Gln Val Gln Arg Ala Phe Ala Pro Lys
85 90 95
Leu Val Thr Glu Val Glu Cys Asn Leu Ala Thr Ile His Gly Gly Pro
100 105 110
Phe Cys Leu Ser Leu Leu Gly Ala Gly Glu
115 120

<210> 16
<211> 121
<212> PRT
<213> Secale cereale

<400> 16
Ser Val Gly Gly Gln Cys Val Pro Gly Leu Ala Met Pro His Asn Pro
1 5 10 15

```

Leu Gly Ala Cys Arg Thr Tyr Val Val Ser Gln Ile Cys His Val Gly
      20              25              30
Pro Arg Leu Phe Thr Trp Asp Met Lys Arg Arg Cys Cys Asp Glu Leu
      35              40              45
Leu Ala Ile Pro Ala Tyr Cys Arg Cys Glu Ala Leu Arg Ile Leu Met
      50              55              60
Asp Gly Val Val Thr Gln Gln Gly Val Phe Glu Gly Gly Tyr Leu Lys
      65              70              75              80
Asp Met Pro Asn Cys Pro Arg Val Thr Gln Arg Ser Tyr Ala Ala Thr
      85              90              95
Leu Val Ala Pro Gln Glu Cys Asn Leu Pro Thr Ile His Gly Ser Pro
      100             105             110
Tyr Cys Pro Thr Leu Gln Ala Gly Tyr
      115             120

```

```

<210> 17
<211> 35
<212> DNA
<213> Artificial Sequence

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```

<220>
<223> Description of Artificial Sequence: PCR primer

```

```

<400> 17
accaataaac tagtatcaac aatggcatcc gacca 35

```

```

<210> 18
<211> 30
<212> DNA
<213> Artificial Sequence

```

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<220>
<223> Description of Artificial Sequence: PCR primer

```

```

<400> 18
ccaacctttt ttattcatca atcggccaca 30

```

```

<210> 19
<211> 27
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: PCR primer

```

```

<400> 19
tcggattcca ttgcccagct atctgtc 27

```

```

<210> 20
<211> 29
<212> DNA

```

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 20

atggggcccta acaatcagta aattgaacg

29

<210> 21

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 21

cggtaccggc aggctgaagt cca

23

<210> 22

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 22

ccgggggatct accatgagcc caga

24

<210> 23

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 23

gaatgaaccg aaaccggcgg ta

22

<210> 24

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 24

taccacctcc ctgaggtttg

20

<210> 25

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 25

ccatgcctag ggtcacactt

20